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IS 10092 (1982): Glossary of terms (and materials of construction) for rotary equipment [MED 17: Chemical Engineering Plants and Related Equipment]

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Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

GLOSSARY OF TERMS (AND MATERIALS OF CONSTRUCTION) FOR ROTARY EQUIPMENT

1. Scope — Covers the definition of terms commonly used in the field of rotary equipment and their materials of construction.

2. Definitions

2.1 Shell — The main part of the dryer in which the material is actually dried. This is usually hollow cylindrical in construction. Shell may be made of steel conforming to IS : 226-1975 'Specification for structural steel (standard quality) (fifth revision)' for normal duty, but for corrosive material it may be SS or lined with SS. Some materials produce adverse effect on the material of the shell in heated condition thereby forcing for selection of suitable material for the shell like silicon or aluminium or killed steel.

2.2 Inlet Hood/Feed Hopper — A chamber through which the material to be dried is fed into the shell. Material of construction is generally steel conforming to IS : 226-1975 depending on material characteristics.

2.3 Outlet Hood/Discharge Hopper — A chamber through which the material after drying in the shell is conveyed outside. Material of construction is generally steel conforming to IS : 226-1975 depending on material characteristics.

2.4 Inlet Seal — Contraption connecting the stationary inlet hood and the rotating shell for sealing the contents of the shell from outside atmosphere. The material of construction shall be generally felt or asbestos mounted with the help of steel plate. In some cases, it may be of steel.

2.5 Outlet Seal — Contraption connecting the stationary outlet hood with the rotating shell for the purpose similar to inlet seal.

2.6 Flights — Metallic strips located inside the shell surface for lifting and showering the contents to help in the better exposure of surface of material dried. Flights material depends on the characteristics of the material handled.

2.7 Guide Plates — Provided at the feed end to move ahead the feed received.

2.8 Retaining Rings — Circular rings welded at feed discharge end to attain desired retention time.

2.9 Trunnion Rolls — Wheels mounted on foundation base to carry the shell. The material of construction can either be cast iron or cast sheet or forged steel depending upon the duty conditions. Similarly, the hardness may be as low as 180 BHN and as high as 300 to 500 BHN.

2.10 Thrust Rollers — Wheels mounted on the foundation and in contact with tyre to restrain longitudinal movement of the shell. Forged or cast steel with hardness of 201-220 BHN is used as the material of construction.

2.11 Drive — It includes gear box, motor, V-belts/chain and sprocket, etc.

2.12 Riding Ring — Metallic rings of heavy section mounted to stiffen portion of the shell through which the weight of the shell with contents is transferred to the trunnion rolls. Cast steel with hardness of 190-210 BHN is used as the material of construction.

2.13 Girth Gear — Large gear wheel mounted on the shell through which the shell is rotated by the driving pinion. Cast steel with hardness of 200-210 BHN is used as the material of construction.

2.14 Knocker — A hammering device for loosening the contents sticking to the walls of the shell. Commercial quality steel is suitable as the material of construction.

2.15 Fixtures — Fixing details for tyres and girth gear with the shell.

EXPLANATORY NOTE

The glossary of terms for rotary equipment given in this standard will enable better commercial understanding of various terms used in the field of rotary equipment and the recommended material of construction.